March 16, 1897.

Dr. W. T. Blanford, F.R.S., V.P., in the Chair.

The Secretary read the following report on the additions to the Society's Menagerie during the month of February 1897:—

The total number of registered additions to the Society's Menagerie during the month of February was 87, of which 32 were acquired by presentation, 5 by birth, 40 by purchase, 8 were received on deposit, and 2 in exchange. The total number of departures during the same period, by death and removals, was 74.

Amongst the additions, attention may be called to a young female African Monkey of the genus *Cercopithecus*, from the Upper Benué River, obtained by purchase on Feb. 2nd, which seems to be referable to *C. tantalus*, Ogilby, described in the Society's 'Proceedings' for 1841 (p. 33): also to

Two Uvæan Parrakeets (*Nymphicus uvæensis*), from the Island of Uvea, Loyalty Group, obtained by purchase Feb. 16th (see P. Z. S. 1882, p. 408, pl. xxvi.): and to

A second female hybrid Antelope, bred between *Tragelaphus gratus* ♂ and *T. spekii* ♀, born Feb. 28th. The former hybrid between the same animals was born Feb. 12th, 1896 (see P. Z. S. 1896, p. 304). The period of gestation of the Antelope was ascertained to be eight calendar months.

I take this opportunity of calling the attention of the Meeting to two Otters received by the Society on the 27th August last year (having been purchased of Mr. James Silcock, of Drummatticonnor Mills, Listdoor, Co. Down, Ireland), and now thriving and very tame in our Gardens. The Irish Otter was separated specifically from the English Otter (*Lutra vulgaris*) by Ogilby as long ago as 1834 (see P. Z. S. 1834, p. 111) under the title of *Lutra roensis*, and I am not aware that the subject has been alluded to since except in reference to his observations (see Bell's 'British Quadrupeds,' p. 138, 1837). But it must be allowed that the Irish Otters which we now have seem to be rather different from the ordinary form, having the tail more flattened, a longer head, a more distinctly white under-lip, and a generally darker colour of the fur. It appears to me, therefore, that the matter is worthy of further investigation. If the Irish Weasel is specifically different from the British species, as believed by Mr. Thomas and other good authorities, why should not the Irish Otter be also distinct? It would be well, therefore, that a series of the two forms should be carefully compared together.

Mr. A. Smith Woodward, F.Z.S., gave an account of his recent visit to South America for the purpose of examining the Fossil Vertebrata of that country, and exhibited a series of photographs and fish-remains. His main object was to see the Museums and collections in the Argentine Republic, but on the way he was also

able to make brief visits to Rio de Janeiro in Brazil and to Montevideo in Uruguay.

In Brazil at present three features of interest claimed attention. The Cretaceous Formations in the provinces of Ceara and Bahia had yielded a large number of remains of marine fishes closely similar to those from deposits of the same age in other parts of the world; and from the neighbourhood of Bahia, within the last few years, Mr. Joseph Mawson had obtained numerous reptilian bones, referable to Mesozoic crocodiles, pterodactyles, plesiosaurs, and probably dinosaurs. Certain lignites occupying isolated basins among the old rocks in the province of São Paulo were crowded with the skeletons of Teleostean fishes evidently of a comparatively modern Tertiary period. These were being collected by Dr. von Jhering for the São Paulo Museum, and by Mr. John Gordon for the British Museum; and when examined in detail, it seemed likely they would afford much information concerning the immediate ancestors of the existing Brazilian freshwater fish-fauna. A third geological formation of special importance was a series of limestones extensively developed in the province of São Paulo, whence Dr. Orville A. Derby some years ago had obtained the remarkable primitive aquatic reptile, *Stereosternum tumidum*. As originally recognized by Prof. E. D. Cope, who had described this animal, it was extraordinarily similar to *Mesosaurus* of the Karoo Formation of South Africa—a series of early Mesozoic deposits specially characterized by extinct reptiles which had often been regarded as the possible immediate ancestors of the Mammalia. Dr. Derby had recently found a new specimen of *Stereosternum* exhibiting almost its complete skeleton, including the remarkably long tail; he had also lately met with an undoubted Labyrinthodont tooth, and there was every indication that before long the important Karoo fauna would be discovered in the South American area.

The Uruguayan National Museum in Montevideo contained nothing of much palæontological interest; and the collection of bones of extinct Mammalia from Uruguay, made by Dr. Conrad Moeller, had been presented by that gentleman a few years ago to the University of Christiania, Norway.

The National Museum of Argentina at Buenos Aires, under the direction of our Corresponding Member, Dr. Carlos Berg, contained the fine collection of Pleistocene Mammalia described by the late Dr. Burmeister, all well preserved and beautifully mounted. There was also a large collection of late Tertiary fish-remains from the neighbourhood of the city of Paraná. The study of these would supplement in an interesting manner the results obtained from the lignite fishes of São Paulo.

Modern progress, however, in the discovery of the extinct vertebrate fauna of the Argentine Republic was best illustrated not in the National Museum, but in the Buenos Aires State Museum, founded by our Corresponding Member, Dr. F. P. Moreno, at La Plata in 1885. The more important specimens had already been briefly described and well figured in the publications of the Museum;

but new collections were continually being obtained by the officers of the Museum, who were periodically despatched on exploring expeditions. Among the more interesting acquisitions of 1896 were some crocodilian and ophidian skeletons from the red sandstones of the Territory of Neuquen, which were supposed to be of Cretaceous age, and had already yielded the Dinosaurian remains lately described by Mr. Lydekker. The Crocodiles (described by Mr. Woodward in the 'Anal. Mus. La Plata, Paleont. Argent.,' pt. iv. 1896) were of special interest as being of a Mesozoic type, with a short and broad head and a terminal narial opening. Their teeth were few and well differentiated into incisors, canines, and molars, apparently without any successional teeth. The Ophidian was in a wonderful state of preservation, but was still undescribed. The red sandstones in which these reptilian remains occurred were believed to be of the same age as the earliest deposits containing mammalian remains in Southern Argentina. Hence the latter were usually considered to date back to the Cretaceous period.

The succession of the mammaliferous deposits of Patagonia and the adjoining territories had hitherto been most thoroughly investigated by Señor Carlos Ameghino, who had conducted an exploring expedition each year since 1887, and had amassed an enormous private collection which his brother, Dr. Florentino Ameghino, had studied with results so important and so well known as not to need detailed recapitulation here. Above the red sandstones of Neuquen, and below the superficial pampean deposits, the brothers Ameghino now recognized two distinct mammalian faunas—the older of the Pyrotherium Formation, and the later of the Santa Cruz Formation, both particularly remarkable for the abundance of highly specialized Ungulata. Near the coast the marine Patagonian Formation fortunately separated these two freshwater or terrestrial horizons, and thus afforded a means of determining their age. The Cetacean remains found in the marine intercalation (as had been noted by Mr. Lydekker) seemed to correspond with those termed Miocene in the northern hemisphere; the Selachian teeth from the same formation presented by the brothers Ameghino to the British Museum were also of a Miocene or even early Pliocene facies. Mr. Woodward was therefore inclined to believe that the Santa Cruz fauna was not earlier than the Miocene, and might even be homotaxial with the Lower Pliocene of the northern hemisphere. There was no decisive evidence of any of the Patagonian mammals hitherto discovered dating back to the Cretaceous period.

Dr. R. H. Traquair, F.R.S., exhibited and made remarks upon a new specimen of the supposed fossil Lamprey (*Palæospondylus gunni*) from the Old Red Sandstone of Caithness, and read a note on its affinities (see below p. 314).

Mr. E. T. Newton agreed with Dr. Traquair that the slight markings seen on the stone near the fish-remains, which had been

thought to represent fin-rays, were not organic and had nothing whatever to do with the fish. Similar ridges were to be seen on a specimen with *Palæospondylus* in the Museum of Practical Geology, but had no relation to the fossil.

The following papers were read :—

1. Note on the Affinities of *Palæospondylus gunni*, Traq. In reply to Dr. Bashford Dean, of New York. By R. H. Traquair, M.D., LL.D., F.R.S.[1]

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Those who are acquainted with my papers on *Palæospondylus gunni* will remember that my principal reason, in my last contribution to the subject, for assigning a Marsipobranch affinity to this singular little Devonian organism was the presence of a cirrated opening, presumably nasal, situated in the front of the cranium. My words were :—

"What is the nature of this aperture with its strange fringe of cirri? It cannot be a sucker like that of the larval *Lepidosteus*. ..... The more obvious comparison—and that which is in harmony with the rest of the structure of our fossil—is that with the single nasal opening of *Myxine* or *Petromyzon*. And if this view be the right one, then *Palæospondylus* is monorhinal, and *is* a Marsipobranch."[2]

I was therefore not a little surprised to find the following statement by Dr. Bashford Dean at p. 70 of his recent work on 'Fishes Living and Fossil,' published after he had received and read the paper from which the above extract is quoted :—"There can be no doubt that *Palæospondylus* possessed a ring-like mouth surrounded by barbels like those of a Myxinoid, and that it lacked paired fins."

Not that Dr. Dean seems to *dispute* my reference of the cirrated opening to a nasal category—on the contrary he reproduces my restoration of *Palæospondylus* without raising any question of the kind. So I can only conclude that he did not read my description with that amount of care which would have prevented so serious a misunderstanding of my words, which surely could not have been plainer.

In this work, however, the author looks favourably on the idea of the Marsipobranch affinities of *Palæospondylus*, even to the extent of speaking of it as "the fossil remains of what seems undoubtedly a Lamprey" (p. 65).

More recently, however, Dr. Dean has seen reason to change this opinion after examining a specimen of *Palæospondylus* which

[1] Communicated by A. Smith Woodward, Esq., F.Z.S.
[2] Proc. Roy. Phys. Soc. Edinb. vol. xii. 1894, p. 314.